

REMARKS

The Examiner is thanked for the performance of a thorough search.

In the Specification, the paragraph on page 13 starting at the line 28, and the paragraph on page 14 starting at the line 22 have been amended to correct typographical errors.

Further, claims 16, 18-24, 26, 28, 30-31, and 35-36 have been amended. Claims 37-39 have been added. Claim 25 has been cancelled. Claims 1-15, 17, and 27 were previously canceled. Hence, Claims 16, 18-24, 26, and 28-39 are pending in the application.

Applicant respectfully requests reconsideration in light of the amendments above and the remarks and arguments herein.

I. ISSUES NOT RELATING TO PRIOR ART

Claims 16-25, and 36 were rejected under 35 USC § 101 because the claimed invention was directed to a non-statutory subject matter.

Applicants amended claims 16, 18-24, 26, 28, 30 – 31, and 35 – 36 to cure the abovementioned deficiency, and respectfully request reconsideration and withdrawal of the rejection.

II. ISSUES RELATING TO ALLEGED PRIOR ART

A. Rejection under 35 USC § 102(e)

Claims 16, 18-26, and 28-36 were rejected under 35 U.S.C. § 102(e) as being anticipated by Haggerty et al. U.S. Patent No. 6, 331, 983 B1 (hereinafter Haggerty). (Office Action, page 3) It is respectfully submitted that claims 16, 18-26, and 28-36 as amended are not anticipated by Haggerty, and reconsideration and withdrawal of the rejection is respectfully requested.

CLAIM 16

Currently amended claim 16 recites the following features:

An apparatus for processing data at a node in a data network, wherein the data network connects a plurality of nodes and at least a portion of the plurality of the nodes form a multicast group, the apparatus comprising:

- a data store that stores a plurality of entries associated with the multicast group, wherein each entry identifies a source that published the entry;
- logic that disseminates the plurality of entries to members of the multicast group;
- logic that receives, from a node that is not a member of the multicast group, a request to run a query, wherein the query specifies matching criteria;
- logic that runs the query against the entries in the data store;
- logic that indicates that the apparatus has been designated as a sole rendezvous node in the multicast group, wherein designation as the sole rendezvous node indicates that the apparatus is to disseminate the plurality of entries to members of the multicast group; and**
- logic that disseminates one or more entries that satisfy the matching criteria to the node that is not a member of the multicast group.

M.P.E.P. section 2131 provides that “[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F2d 628, 631, 2 USPQ2d 1051, 1053. (M.P.E.P. section 2131)

As it will be shown below, at least one feature set forth in claim 16 is neither expressly nor inherently described in Haggerty. For example, Haggerty does not describe: “**logic that indicates that the apparatus has been designated as a sole rendezvous node in the multicast group, wherein designation as the sole rendezvous node indicates that the apparatus is to disseminate the plurality of entries to members of the multicast group.**”

Haggerty describes a method and a system for establishing connections in a switch-based communications network for multicast traffic. (Abstract) Haggerty’s switched network includes a plurality of hosts and switches connected by links, where each switch has at least one network port connected to one or more hosts. (Haggerty, col. 7, lines 27-31) Further, each switch includes 1) a connection database of valid connections between different ports on the

switch, and 2) a setup mechanism for establishing temporary connections between the different ports on the switch. (Haggerty, col. 7, linens 32-34)

When a local host attached to a local switch wishes to join the multicast group and receive multicast messages from a multicast source host/switch, that local host sends a “join group message” to its local switch. (Haggerty, col. 7, lines 45-48; col. 8, lines 57-59) Subsequently, the local switch checks whether it already has in its connection table a connection entry for that particular group address and the source host address. (Haggerty, col. 7, lines 47-52) Such a connection entry could have been established in the past when, for example, some other local host connected to that local host was already a member of the group, and was receiving multicast messages from the source host.

If a connection entry exists for the group address and source host address, then the local switch adds the port on which the local host is connected as an out-port in its connection table. (Haggerty, col. 8, lines 59-63) Therefore, if such a connection entry already exists between the local switch and the group source host, then adding a local host to the group is handled only by the local switch, and only the local switch and the group source host know that the local host joined the group. Thus, in Haggerty, adding the local host can be handled locally without updating connection tables of other nodes in the network.

In sharp contrast, claim 16 recites that there is **only one rendezvous node** in the multicast network, and that **only the apparatus that has been designated as a sole rendezvous node** in the multicast group **can disseminate the plurality of entries to members of the multicast group**. Therefore, a **request to run a query, wherein the query specifies matching criteria**, sent from a local host who wished to join the multicast group, has to be passed via the multicast network to the **rendezvous node**, who, in turn, **runs the query against the entries in its data store**, and adds the local host to the group by **disseminating the plurality of entries to all members of the multicast group**.

Clearly then, the rendezvous node is the only node that is designated and privileged to add a new member to the group. In addition, the rendezvous node does not have to be a local switch of the local host who wishes to join the group.

Referring again to Haggerty, if, upon receiving a “join group request” from a local host, the local switch determines that it does not have a connection entry for the group address and source host address in its connection table, then, the local switch composes and sends a join group message to other switches. (Haggerty, col. 8, lines 60-66) This “join group message” contains the designated group address and the local switch address. (Haggerty, col. 8, lines 63-66) When the “join group message” eventually reaches a switch in the network that already has a connection entry for the requested group address and source host address in its connection table, then that switch adds the local host and links from the local host to that switch into its connection table. However, that particular switch does not disseminate a plurality of data store entries to all remaining members of the multicast group. Further, since it can happen that the connection between the local host and the source node is established only via just one switch, if that switch fails, the local host will receive no multicast messages from the host.

In sharp contrast, because claim 16 recites that the data multicast network has **only one rendezvous node**, and that **only the rendezvous node** in the multicast group **can disseminate the plurality of entries to members of the multicast group**, in response to a query to join the multicast group, the **rendezvous node disseminates the plurality of entries to all members of the multicast group**, and thus sends new entries to data stores at all nodes in the multicast group. The main advantage of this feature is to increase network reliability. However, this feature is not described in Haggerty.

Therefore, because there is at least one feature recited in claim 16 that is neither expressly nor inherently described in Haggerty, claim 16 is not anticipated by Haggerty.

Reconsideration and withdrawal of the rejection is respectfully requested.

CLAIMS 26 AND 36

Independent claims 26 and 36 recite features similar to those recited in claim 16. Applicants amended claims 26 and 36 in a way similar to the amendment for claim 16. Therefore, claim 26 and 36, as amended, are not anticipated by Haggerty for the same reasons as discussed for claim 16.

Reconsideration and withdrawal of the rejection is respectfully requested.

CLAIMS 37-39

Applicants added claims 37-39 that recite that the “**plurality of entries to members of the multicast group comprises updates to data stores associated with nodes that are not members of the multicast group.**”

The above limitation cannot be found in Haggerty. In Haggerty, upon receiving a “join group request” from a local host at the local switch, one of the switches within the network (either the local switch or some other switch that has an appropriate connection entry in its connection table) adds the local host to the group. However, that switch does not send any updated connection information to the nodes who are not the members of the particular multicast group.

In fact, after adding the local host to the group, there will be, most likely, just one path that is going to facilitate the sending of multicasts from the source to the local host. Further, after adding the local host to the group and establishing the path for sending multicasts to the local host, only the nodes on that particular path are going to maintain information about that path and the added local host. But, in no circumstances, the nodes that are non-members of the group will receive any information about the path and the fact the local host has joined the group.

In sharp contrast, according to claims 37-39, the rendezvous node will disseminate a “**plurality of entries to members of the multicast group comprises updates to data stores associated with nodes that are not members of the multicast group.**”

Therefore, the features recited in claims 37-39 are not described in Haggerty.

REMAINING DEPENDENT CLAIMS

The pending claims not discussed so far are dependent claims that depend directly or indirectly on a claim that is discussed above. Because each of the dependent claims includes the limitations of the claim upon which it depends, the dependent claims are patentable for at least those reasons given above for the claim upon which it depends. In addition, the dependent claims introduce additional limitations that independently render them patentable. However, due to the fundamental difference already identified, a separate discussion of those limitations is not included.

Reconsideration and withdrawal of the rejection is respectfully requested.

CONCLUSION

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Please charge any shortages or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,

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